

CLAIMS

1. A roof structure comprising:
 - 2 a support web;
 - 3 an exposure surface perpendicularly bisecting the
 - 4 support web;
 - 5 a collector perpendicularly bisecting the support web
 - 6 opposite the exposure surface, wherein the collector has flanges projecting
 - 7 outward in opposing lateral directions, each flange having a distal edge
 - 8 upwardly extending from the flange.

2. The roof structure of claim 1, wherein the exposure surface and
the collector are integral with the support web to eliminate the necessity for
parts inventory.

3. The roof structure of claim 2, wherein the distal edge upwardly extends from each flange at an angle of about 90 to 175 degrees.

4. The roof structure of claim 2, wherein the distal edge upwardly
2 extends from each flange at an angle of about 125 to 145 degrees.

5. The roof structure of claim 2, wherein the exposure surface has
a negative angle to the support web.

6. The roof structure of claim 2, wherein the collector has a depth greater than the maximum expected deflection of the roof support.

1 7. The roof structure of claim 2, wherein the distal edge is generally
2 parallel to the support web.

1 8. The roof structure of claim 2, wherein the roof structure is
2 manufactured by a pultrusion process, extrusion process, weldment process,
3 rollform process, or a combination thereof.

10. The combination of claim 9, wherein the roof panel includes a
drip edge extending longitudinally along the interior surface of the roof panel.

1 11. The combination of claim 10, wherein the drip edge extends
2 parallel with the longitudinal axis of the roof support.

1 12. The combination of claim 9, wherein a first roof panel and a
2 second roof panel abut opposing sides of the support web, and the exposure
3 surface of the roof support overlaps the exterior surface of both the first
4 panel and the second panel.

1 13. The combination of claim 9, wherein the exposure surface of
2 the roof support includes flanges projecting outward in opposing lateral
3 directions.

14. The combination of claim 13, wherein the exterior surface of
the roof panel includes an arcuate projection and at least one flange of the
exposure surface of the roof support includes an arcuate channel, the arcuate
channel being configured to interface with the arcuate projection of the roof
panel.

15. The combination of claim 14, wherein the arcuate channel
extends parallel to the longitudinal axis of the roof support.

16. The combination of claim 9, wherein the roof structure has a
modulus of elasticity of at least about 2,500,000 pounds per square inch.

17. The combination of claim 9, wherein the opposing lateral distal
edges of the collector upwardly extend at an angle from the collector of
about 90 to 175 degrees.

1 19. The method of claim 18, wherein the fibers are selected from a
2 group consisting of at least glass, graphite, polyethylene, polyvinyl and a
3 combination of the same.

1 20. The method of claim 18, wherein the resin includes an epoxy
2 resin.

1 21. The method of claim 18, wherein the fiber-resin combination is
2 contoured in the shape of a roof support including:
3 a support web;
4 an exposure surface perpendicularly bisecting the
5 support web;
6 a collector perpendicularly bisecting the support web
7 opposite the exposure surface, wherein the collector has flanges projecting
8 outward in opposing lateral directions, each flange having a distal edge
9 parallel to the support web and upwardly extending from the flange.

1 22. The method of claim 18, further comprising cutting the cured
2 fiber-resin combination.

1 23. The method of claim 18, wherein the roof support has a
2 moment of inertia of about 3.180 inches⁴.

1 24. The method of claim 18, wherein the fiber-resin combination is
2 in the shape of a roof support including a support web having a top surface
3 and a bottom surface, wherein the top surface is configured to be closely
4 adjacent to an interior surface of a roof panel.

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